

## Short Course 5

### Detectors for SPECT and PET

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Monday, October 18, 08:30 - 18:00 Room Cesarea

**Organizer:** Harrison Barrett, Univ. Arizona  
**Instructors:** Lars Furenlid, Univ. Arizona  
Harrison Barrett, Univ. Arizona

This course will survey the state of the art in gamma-ray detectors for SPECT and PET, with a discussion of emerging technologies as well as traditional semiconductor and scintillator devices. Considerable emphasis will be placed on statistical characterization of the detectors and on optimal estimation methods that take the statistical properties into account. Advanced data-acquisition methods will be discussed, and examples will be given of some current detector projects at the Center for Gamma-ray Imaging of the University of Arizona.

Topics will include:

- Survey of technologies for gamma-ray detection
- Detector requirements for SPECT and PET
- State of the art in scintillation detectors
- State of the art in semiconductor detectors
- Statistical modeling and estimation methods
- Data acquisition systems
- Examples of applications

As course materials, we will provide copies of all of our slides as well as relevant book chapters and papers. We will plan to get these materials well in advance of the conference to the organizers so that IEEE staff can do the duplication.